

42
Santol
[Add new claim 22:]

22. The apparatus of claim 12, wherein the quasi 1D dielectric material comprises a cuprate.

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REMARKS

Pending Claims

Independent claims 1 and 12 and dependent claims 2-11 and 13-22 are pending.

Claim Status

Independent claims 1, 3-4, 10, 12, and 20 have been rejected.

10 Dependent claims 2, 5-9, 11, and 13-19 have been objected to as dependent on rejected claims, but would be allowable if rewritten in independent form.

Amendments

The amendment to the specification corrects a cited Figure number so that the citation conforms with the fact that capacitor 70 is shown in Figure 8.

15 The features of new claims 21 and 22 are supported by the original specification at page 7, lines 13-14, 21-22, 27-30.

Rejections under 35 U.S.C. § 103

Claims 1, 3-4, 10, 12, and 20 have been rejected as obvious over U.S. Patent 5,572,052 ("Kashihara"). Office Action, page 2.

20 The Office Action nowhere states that one of Kashihara's dielectric material is a material with a charge or spin density wave state as recited in claims 1 and 12. Kashihara does not disclose that any of his dielectric materials has a density wave state. For example, Kashihara describes dielectric film 144 as a ferroelectric such as ceramic PZT or PLZT rather than as a material with a density wave state. Col. 1, lines 56-57, 13-15.

25 Unlike the dielectric material of pending claims 1 and 12, ferroelectric ceramics do not inherently have a charge or spin density wave state.

Furthermore, quasi-1D materials do not inherently have a spin or charge density state. Thus, even if one of Kashihara's ferroelectric films can be quasi-1D, that does not show that the film can have a spin or charge density wave state as the material recited in

30 claims 1 and 12.

Since no evidence is provided that one of Kashihara's dielectric materials has a spin or charge density wave state, the prima facie case for obviousness does not include all features of claims 1 and 12 and is thus, defective.

For the above reasons, Applicants request that the obviousness rejections of
5 claims 1 and 12 be withdrawn.

Applicants also request that rejections and objections to dependent claims 2-11, 13-20 be withdrawn due to the dependence of these claims on allowable base claims.

With respect to new dependent claims 21 and 22, Applicants note that Kashihara does not disclose dielectrics comprising cuprates. See e.g., Kashihara's abstract. Thus,
10 claims 21 and 22 should be non-obvious over Kashihara due to an absence of a teaching therein for a cuprate dielectric. Claims 21 and 22 are also non-obvious by dependence on non-obvious base claims.

Applicants respectfully request allowance of pending claims 1-22.

In the event of any non-payment or improper payment of a required fee, the
15 Commissioner is authorized to charge or to credit **Lucent Technologies Deposit Account No. 12-2325** to correct the error.

Respectfully,

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MARKED UP AMENDMENT

Paragraph between, page 7, line 27, and page 8, line 3:

Figure 9 shows a transceiver 80 for detecting a microwave or millimeter wave
5 transmission 81. The transceiver 80 includes a capacitor 82, e.g., capacitor 70 of Figure
[9] 8, and an amplifier 84 connected to measure voltages across the capacitor electrodes
86, 88. The capacitor 82 functions as a receiving antenna that is sensitive to
transmissions whose wavelengths are much larger than the distance, d , between the
electrodes 86, 88. The high sensitivity results from a giant ϵ_1 for the capacitor's dielectric
10 90 at operating temperatures. The giant ϵ_1 produces a large voltage response when d is
 $(\epsilon_1)^{1/2}$ times smaller than half of the wavelength of the received signal.